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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/622,541	07/21/2003	Hidemi Kubota	01272.020601	3893

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EXAMINER

STEPHENS, JUANITA DIONNE

ART UNIT

PAPER NUMBER

2853

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/622,541	<b>Applicant(s)</b> KUBOTA, HIDEKI	
	<b>Examiner</b> Juanita D. Stephens	<b>Art Unit</b> 2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on Application filed 7/21/03.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 3, 4/1, 4/3, 5/4/1, 5/4/3, 6-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 6, 7 and 11 is/are rejected.
- 7) ☒ Claim(s) 2, 3, 4/1, 4/3, 5/4/1, 5/4/3, 8-10, 12-14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to because reference number "330" is not shown on the Figures as indicated on page 25, line 21 of the Specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

***Claim Objections***

3. Claims 1-6, 9-10, and 11-14 objected to because of the following informalities:

**Claim 1**

Line 4 the word “elements” is misspelled.

Line 6 replace “discharging” with –discharge--.

Lines 6-7 the recitation of “said energization means” has no antecedent basis. (The electrothermal energy converting elements are energized, however, the claim has not recited what that energizing means is, therefore “said energization means” has no antecedent basis).

Line 9 replace “said electrical energy “ with –an electrical energy--.

Line 13 replace “element” with –elements--.

Line 14 replace “an electrical energy” with –said electrical energy--.

Line 14 replace “a bubble” with –said bubble--.

Line 17 replace “element is” with –elements are--.

Line 19 replace “element” with –elements--.

Line 20 replace “an electrical energy” with –said electrical energy--.

Line 20 replace “a bubble” with –said bubble--.

**Claim 4**

Line 3 insert –an—between “with energization--.

Line 5 the recitation of “said voltage generating means” has no antecedent basis with respect to claim 1, since it is a multidependent claim.

Line 7 replace “en energization” with –said energization--.

**Claim 6**

Line 8 replace "element" with –elements--.

Line 9 replace "a bubble" – said bubble--.

Line 10 replace "nozzle" with –ink discharge ports--.

Line 11 replace "element is" with –elements are--.

Line 13 replace "an electrical" with –said electrical--.

Line 15 replace "nozzle" with –ink discharge ports--.

**Claim 9**

Line 6 replace "en" with –said--.

**Claim 11**

In claim 11 there or no method step provided.

Line 12, the word "discharging" is misspelled.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 6-7, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Kishida et al. (US 5,172,134).

Kishida et al. discloses an inkjet printing method (Fig. 9) and an inkjet printing apparatus (Figs. 3 and 6) cable of mounting a printing head (202) having a plurality of ink discharging ports (ejection outlets 52) for discharging ink (col 7, Ins 35-50), electrothermal energy converting elements (54, 7) (col 4, Ins 56-61) provided corresponding to each of said plurality of ink discharging ports being energized, and then generating a bubble in the ink to discharge ink, said energization means comprising: **1)** a single driving power source (100) serving as a source of supplying said electrical energy, **2)** a control unit (20) for controlling the electrical energy supplied from said driving power source (col 5, Ins 51-53), **3)** wherein said control unit performs a control for supplying said electrothermal energy converting element with such an electrical energy that generates a bubble to the extent that ink droplets are discharge from the ink discharge ports, if the electrothermal energy converting element is driven to accomplish printing (col 8, Ins 42-51; col 9, Ins 2-10; col 9, In 67-col 10, In 10), **4)** wherein said control unit performs a control for supplying said electrothermal energy converting element with such an electrical energy that generates a bubble to the extent that ink droplets are not discharged from the ink discharge ports (col 8, Ins 42-51; col 9, Ins 2-10; col 9, In 67-col 10, In 10), and wherein said controls are selectively performed (col 9, In 52-col 10, In 10), **5)** first step for supplying said electrothermal energy converting element with such an electrical energy that generates a bubble to the extent that ink droplets are discharge from the ink discharge ports, if the electrothermal energy converting element is driven to accomplish printing (col 8, Ins 42-51; col 9, Ins 2-10; col 9, In 67-col 10, In 10), **6)** a second step for supplying said electrothermal energy

converting element with such an electrical energy that generates a bubble to the extent that ink droplets are not discharged from the ink discharge ports (col 8, lns 42-51; col 9, lns 2-10; col 9, ln 67-col 10, ln 10), and wherein said first step and second step are selectively performed (col 9, ln 52-col 10, ln 10), and 7) wherein said energization means generate driving signal for supplying said electrothermal energy converting elements corresponding to low use frequency ink discharging ports with such an electrical energy that generates bubbles in ink in said low use frequency ink discharging ports to the extent that ink droplets are not discharged from said low use frequency ink discharging ports (col 2, lns 29-39; col 8, lns 28-51; col 9, lns 2-10; col 9, ln 67-col 10, ln 10).

***Allowable Subject Matter***

6. Claims 2, 3, 4/1, 4/3, 5/4/1, 5/4/3, 8, 9, 10, 12, 13, and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 3, 4/3, and 5/4/3 will be allowed when claim 2 is rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 5/4/1 will be allowed when claim 4/1 is rewritten in independent form including all of the limitations of the base claim and any intervening claims and corrected as identified in the "Claim Objection" section. Claims 9 and 10 will be allowed when claim 8 is rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 13 and 14 will be allowed when claim 12 is

rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter:

The limitation of wherein said control unit is provided with at least two voltage generating means for generating a high voltage and a low voltage, respectively, and either one of the two different voltages generated by each of the corresponding said voltage generating means is selectively applied to said electrothermal energy converting element, recited in claim 2. This invention solves the problem of maintaining at all times, a condition of ink formed at and around discharge ports suitable for discharge without performing a predischARGE that involves an interruption of a printing operation and capable of continued printing operation.

The limitation of wherein said control unit is provided with energization time control means or selecting either a long period of time or a short period of time, during which the voltage generated by said voltage generating means is applied, and said energization time control means set an energization time valid when a lower voltage of the high and low voltages generated by said voltage generating means is selected longer than the energization time valid when the higher voltage is selected, recited in claim 4/1. This invention solves the problem of maintaining at all times, a condition of ink formed at and around discharge ports suitable for discharge without performing a predischARGE that involves an interruption of a printing operation and capable of continued printing operation.



The limitation of wherein said energization means is provided with a voltage generating means for generating at least a high voltage and a low voltage and voltage selecting means capable of applying selectively either of the two different voltages generated by said voltage generating means to said electrothermal energy converting element, recited in claim 8. This invention solves the problem of maintaining at all times, a condition of ink formed at and around discharge ports suitable for discharge without performing a predischarge that involves an interruption of a printing operation and capable of continued printing operation.

The limitation of wherein said electrothermal energy converting element is energized with at least either a high voltage or a low voltage applied selectively thereto, recited in claim 12. This invention solves the problem of maintaining at all times, a condition of ink formed at and around discharge ports suitable for discharge without performing a predischarge that involves an interruption of a printing operation and capable of continued printing operation.

#### **Contact Information**

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juanita D. Stephens whose telephone number is (571) 272-2153. The examiner can normally be reached on Flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Juanita Stephens", with a stylized flourish at the end.

Juanita D. Stephens  
Primary Examiner  
Art Unit 2853

October 29, 2004